Tortrix corylana, and *viburnana*, Engstlen.
Sciaphila Wahlbomiana, Engstlen.
Penthina lacunana, Engelberg.
Grapholita cirsiana, Engstlen and Engelberg.
Nemotois metallicus, Engelberg.

I have several plumes and *Phycidiæ*, which are as yet unnamed; and had not the season of 1886 been very backward indeed, and with an unusual amount of snow, the probabilities are that our list would have been considerably extended.

16, Clarendon Road, Edgbaston,
Near Birmingham:
September 25th, 1890.

NOTES ON SOME BRITISH AND EXOTIC *COCCIDÆ* (No. 19).

BY J. W. DOUGLAS, F.E.S.

PLATE I.

LECANIUM SAROTHAMNI, *n. sp.*

♀ scale, adult; oval, very convex, chestnut-brown, shining, smooth, on the sides only and extending to the margin 8—9 short, transverse black lines, very slightly raised and not very perceptible (sometimes wanting entirely), amongst which are slight confluent punctures, sometimes also a few punctures on the disc. Eventually, when the scale becomes quite dry and empty, all the punctures become deeper, especially on each side of the smooth median line, which thus is sometimes rendered slightly but obtusely carinate. Anal cleft short, the point above it very small, not projecting. Antennæ (fig. 2a) very small, of 7 joints; 1st and 2nd widest, in length subequal; 3rd longest, nearly as long as the remaining four together, with two long hairs near the apex; 4th, 5th and 6th each successively shorter and narrower, the 5th with one very short hair; 7th very small, with several long hairs. Legs (fig. 2b) long, slender; tibiæ scarcely wider than the tarsi, but a trifle longer; tarsi with two long digitules very finely clubbed; claw short, obtusely pointed, with two short, dilated digitules. There are two hairs on the trochanter, and three on the femur, but none evident on the tibiæ and tarsi of the three specimens examined, thought it is possible they may have been rubbed off in the preparation for the microscope. Length, 4—5, breadth, 4, height, 3 mm.

Larvæ very small, pale yellowish, present no tangible features to distinguish them from those of other *Lecania*.

I am indebted to Mr. R. Newstead, Grosvenor Museum, Chester, for the great pains he has taken in preparing specimens and making drawings of the antennæ and legs.

In September, 1889, Dr. T. A. Chapman, Hereford, sent some scales which he had just then found on stems of broom (*Sarothamnus scoparius*). In some respects these seemed to be like *Lecanium genistæ*, Sign. (Ess. Cochen., p. 235), which Signoret found abundant in the pine forests on the coasts at Hyères and Cannes, on *Genista anglica*;

but in that species the scales are 8 mm. long by 4 broad, being, Signoret says, one of the largest species found in France. The scales I received were dry and empty, and the stems of broom to which they were attached were dead when found, so it seemed possible that the life of the insects had been arrested, and the length of the scale restricted to 5 mm. by the premature death of the food-plant, and I determined to wait a year for the solution of the question.

This season Dr. Chapman has sent several scales on three occasions; in all of them the *insect* was mature, and the scale full of very small white eggs, but the scale itself differed each time. On June 17th the insects were alive, and the scales (not yet firm) had attained nearly the full size, but were yellow-brown, smooth though very finely punctured, and had 8—9 narrow black lines extending across from margin to margin at equal distances apart, the lines strongest on the anterior part of the scale. On June 21st the scales were redder-brown, the transverse black lines a trifle raised, the punctures generally, especially on each side of the median line, deeper and more conspicuous. On July 10th the black lines had in most cases disappeared from the disc, and remained on the sides towards the margins only, or in some instances had quite vanished. This last consignment of scales was attached to vigorous living shoots of broom, and the maximum length of 5 mm. was not in any case exceeded, so that the full growth had been attained.

The male in any stage was not obtained.

This species on the broom differs materially from *L. genistæ* on the allied Petty-whin, inasmuch as that species, as described by Signoret, has scales nearly twice as long (8 mm.), and no mention is made of the very characteristic black lines; the antennæ also are described as of 8 joints; the 3rd, 4th and 5th longest and subequal, the 5th at the apex with three hairs, of which one is very long; 6th and 7th equal, the latter with three short hairs; 8th twice as long as the 7th, with eight to ten hairs; tibiæ and tarsi slender, the former one-fourth longer than the latter; claws broad at the base, with one of the digitules a little larger than the other.

Dr. Chapman informs me that the scales are gregarious on the under-side of last year's shoots of the broom, attached by preference to sloping or horizontal branches, and, curiously, to a great extent to such as were in a dying state. The death of the branches Dr. Chapman attributes to the attack of an Aphid with which they are infested. He sent some examples to Mr. Buckton, who says they are the common *Siphonophora pisi*, Kalt. (Brit. Aphides, vol. i, p. 134, pl. xiv), a general

feeder, but particularly attached to *Papilionaceæ*, and in some years very destructive to peas and other farm crops. I apprehend that the *Lecania* also helped to pump out the life of the broom.

The female *Lecania*, as a rule, fix themselves in early life, and remain attached to the same site for the remainder of their existence. "J'y suis, j'y reste," might be their family motto. But Dr. Chapman tells me that these on the broom were still on the move in May, the probable reason being, I think, that they found the supply of sap on which they depended for a living was getting short, or it may be deteriorated in consequence of the additional absorption of it by their fellow-squatters, the Aphids, and so they felt compelled to shift to "fresh *wood* and pasture new," a proceeding they would not otherwise have adopted. I once witnessed a similar migration of young, full-sized females of *Lecanium beaumontiæ*, which moved about freely on the withering stems of *Beaumontia grandiflora*, on which they had come to me (*cf.* Ent. Mo. Mag., vol. xxiv, p. 95).

Lecanium ciliatum, *n. sp.*

♀ scale, mature. Ochreous to light brown; outline variable, broad rounded oval (fig. 3a profile, fig. 3b front view), or at times irregular narrow oval, or transversely oval, broadly rounded at the sides, being then broader than long (length, 5, breadth, 6 mm.); in all cases the middle portion is occupied by a high, broad, smooth, fusiform swelling, of which one point is close above the small anal cleft, the other not extending to the anterior margin by a considerable space; the top with two distinct rows of deep, more or less large, punctures; the entire elevation resembling a convex, pointed scale, superimposed on a broader, flatter one; the remainder of the surface of the scale being comparatively flat, and covered with a reticulation of confused lines and confluent punctures; the entire margin with a fringe of fine concolorous hairs (Mr. Newstead says these are white and conspicuous to the naked eye in the living insect), which become more or less abrated in the dry scale. Antennæ (fig. 3c) of 7 joints; 1st stout, widest; 2nd not quite so long; 3rd as long as the 4th, 5th and 6th together, without hairs, these three latter in length subequal, the 4th a trifle the longest, the sides suddenly constricted in the middle, where there are one very long and one very short hair placed together on one side, and a still shorter one on the opposite side; a single long hair on the 1st, 2nd and 5th joints, two on the 6th, and about six on the 7th.

"Tibiæ about twice the length of the tarsi, constricted at about one-third of the distance from the apex. Tarsal digitules long, more than two-thirds the length of the tarsi"—(R. Newstead). Length, 5·5, breadth, 5 mm.

"♂ scale (fig. 3d), glossy white, elongated, convex, with one central and two lateral square, granular projections, some of the posterior ones double; margin with a rather strong, glassy fringe. The only specimen I possess has the posterior portion wanting, the imago having escaped before I discovered it."—(R. N.).

"Larvæ large, dark yellow; antennæ of 6 joints; 1st widest, oval, in length

equal to the 4th and 5th ; 2nd shortest, with one long hair ; 3rd longest, with two long hairs ; 4th and 5th equal, the 4th with one long hair on the under- and one on the upper-side, 5th with one very long hair ; 6th nearly as long as the 4th and 5th, with two long and three or four shorter hairs, the longest arising from the middle of the joint. Tibiæ and tarsi of nearly equal length, the former with several hairs, the latter with two long ones. Anal cleft deep. The larvæ, which appear a month later than *L. fuscum*, are larger than those of any other species of *Lecanium* that I have examined."—(R. N.).

In the third week of June in the years 1887, 1888 and 1889, Mr. G. C. Bignell, of Stonehouse, Devon, sent on each occasion a single example of this very remarkable scale, they being all he could find on an oak (*Quercus robur*) in his locality, and as they had some resemblance to Réaumur's fig. 8, pl. 6 (*Pulvinaria lanatus*, Gmel., Sign.), it seemed possible that they might be that species before the development of the ovisac represented in the figure, and so I have waited for more examples. This year I requested Mr. Newstead to look for such scales, and on July 26th he obtained several on oaks in Delamere Forest, some of them having eggs within them, proving that they were not *Pulvinaria*, which has an external ovisac. The species does not appear to have been described or figured by Réaumur, Planchon, Signoret, or any other author. Unlike *L. fuscum*, which is found among the buds at the ends of the last year's shoots of oaks, this was seen by Mr. Newstead only on branches four or five years old, and far from their termination.

I am greatly indebted to Mr. Newstead for searching for this species, and also for the notes of his observations and the excellent figures reproduced on the plate.

153, Lewisham Road, S.E. :
October, 1890.

ON THE NEW AUSTRALIAN VINE PEST.

BY E. BERGROTH, M.D.

The Australian newspapers of 1890 have contained many accounts of the occurrence in immense multitudes of a Hemipterous insect injurious to the vineyards and orchards in New South Wales and Victoria. The government entomologist of N. S. W., Mr. French, has found a mixture of strong benzole to be the best remedy against it. At the Meeting of the Linnean Society of N. S. W. on February 26th, 1890, Mr. Fred. A. A. Skuse, the well known Dipterist, exhibited specimens of the insect, stating that it belonged to the family *Capsidæ*, and was related to the American Chinch bug. In a recent number of